Contribution ID: **38** Type: **Oral presentation**

The SPES project at the INFN- Laboratori Nazionali di Legnaro

Thursday, 21 September 2017 09:20 (25 minutes)

The SPES project is in the construction phase at the Legnaro National Laboratory (LNL) of INFN. It is an interdisciplinary project, ranging over nuclear physics, nuclear medicine and materials science. SPES will provide a Radioactive Ion Beam facility for the study of neutron rich unstable nuclei of interest to nuclear and astro-nuclear physics research. At the same time, it will host a laboratory for research and production of radioisotopes to be applied in nuclear medicine.
SPES is based on a dual exit high current Cyclotron, with proton beam energy 35-70 MeV and 0.2-0.5 mA, used as proton driver to supply an ISOL system with an UCx Direct Target able to sustain a power of 10 kW and produce neutron rich ions at intensities one order of magnitude higher than existing facilities. The second exit will be used for applied physics: radioisotope production for medicine and neutrons for material study.
The main SPES physics program is based on the use of the re-accelerated exotic beams by the ALPI superconductive linac which allows having beams at energies in the range of 10 MeV/n. At these energies nuclear reactions with radioactive beams will be possible, and more exotic nuclei by transfer reaction will be produced and studied.
The layout of SPES was designed in such a way to operate two targets at the same time distributing the beam according to a schedule that minimizes the radiation problems. The proton beam can be sent to two ISOL target caves, three caves for radioisotopes production and developments and an area for neutron production and material study.

Primary author: PRETE, Gianfranco (LNL)

Presenter: PRETE, Gianfranco (LNL)

Session Classification: Session 1